AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-24 (Canceled.)

25. (New) Process for the treatment of wooden elements, said process comprising the following steps:

a) conditioning said wooden elements to reduce their moisture content; and

b) performing one of the following sequences of steps selected from the group consisting of at least the sequence of steps b1) to b4) or at least the sequence of steps bb1) to bb2);

said sequence of steps b1) to b4) at least comprising:

b1) impregnating the wooden elements obtained from step a) with at least one water-borne wood preservative,

b2) heating the wooden elements obtained from step b1) at a temperature of at least 51° C, to fix said wood preservative(s) in said wooden elements;

b3) impregnating the wooden elements obtained from step b2) with a solution comprising polymerizable reactive groups having a reactive double bond, identical or

different, that will form a polymer under polymerizing condition, and

b4) subjecting the wooden elements obtained from step b3) to polymerizing condition to polymerize said reactive group(s);

said sequence of steps bb1) to bb2) at least comprising:

bb1) impregnating the wooden elements obtained from step a) with a mixture comprising at least one water-borne wood preservative and polymerizable reactive groups having a reactive double bond, identical or different, that will form a polymer under polymerizing condition, and

bb2) heating the wooden elements obtained from step bb1) at a temperature of at least 51°C to fix said wood preservative(s) and to polymerize said reactive groups.

26. (New) Process according to claim 25, wherein it comprises the following steps:

a) conditioning said wooden elements to reduce their moisture content; and b1) impregnating the wooden elements obtained from step a) with at least one water-borne wood preservative,

b2) heating the wooden elements obtained from step b1) at a temperature of at least 51° C, to fix said wood preservative(s) in said wooden elements,

b3) impregnating the wooden elements obtained from step b2) with a polymerizing solution comprising reactive groups having a reactive double bond, identical or different, that will form a polymer under polymerizing condition, and at least one water-borne wood preservative, identical or different than the one of step b1)

b4) subjecting the wooden elements obtained from step b3) to polymerizing condition to polymerize said reactive group(s).

27. (New) Process according to claim 25, wherein it comprises the following steps:

bb1) impregnating the wooden elements obtained from step a) with a mixture comprising at least one water-borne wood preservative and polymerizable reactive groups having a reactive double bond, identical or different, that will form a polymer under polymerizing condition, and

bb2) heating the wooden elements obtained from step bb1) at a temperature of at least 51°C to fix said wood preservative(s) and to polymerize said reactive groups.

28. (New) Process according to claim 26, wherein the impregnation step b1) is carried out with a solution containing a wood preservative in an amount up to 2.5% in weight.

29. (New) Process according to claim 26, wherein the impregnation step b3) is carried out with a solution containing 5 to 12% in weight of polymerizable reactive

groups having a reactive double bond or issued from a compound having a reactive double bond.

30. (New) Process according to claim 29, wherein the solution of step b3) further comprises from 0.04 to 0.12% in weight of the wood preservative of step b1).

31. (New) Process according to claim 27, wherein the impregnation step bb1) is carried out with a solution comprising from 2 to 5% in weight of polymerizable reactive groups having a reactive double bond or issued from a compound having a reactive double bond, from 2.0 to 2.6 % in weight of wood preservative.

32. (New) Process according to claim 26, wherein the cooling step is carried out for a period of at least 1 to 12 hours.

33. (New) Process according to claim 25, wherein it further comprises after step b4) or bb2), a drying steps of the wooden elements obtained from steps b4) or bb2).

34. (New) Process according to claim 25, wherein the wood preservative is a water-borne wood preservative.

35. (New) Process according to claim 34, wherein the water-borne wood preservative is selected from the group consisting of Ammoniacal Copper Quat., copper azole, Ammoniacal Copper Arsenate and Chromated Copper Arsenate.

36. (New) Process according to claim 25, wherein said reactive groups of the polymerizable solution have a reactive double bond or are issued from a compound having a reactive double bond.

37. (New) Process according to claim 29, wherein reactive groups are selected from the group consisting of allyl group, vinyl group, acrylate group, methacrylate group and polymers comprising at least one group selected from the group consisting of allyl group, vinyl group, acrylate group and methacrylate group.

38. (New) Process according to claim 37, wherein said reactive groups are polyethylene glycol diacrylate or polyethylene glycol dimethacrylate.

39. (New) Process according to claim 38, wherein said reactive groups are polyethylene glycol diacrylate or polyethylene glycol dimethacrylate, having a molecular weight comprised between 600 and 10000 daltons.

40. (New) Process according to claim 25, wherein the moisture content of the wooden element obtained from step a) is comprised between 15 and 35%.

41. (New) Process according to claim 40, wherein the moisture content of the wooden element obtained from step a) is comprised between 24 and 26%.

42. (New) Process according to claim 25, wherein the drying step a) is selected from the group consisting of kiln drying, air drying and air seasoning.

43. (New) Process according to claim 25, wherein the amount of wood preservative impregnated in the wooden elements is superior or equal to 9.6 kg/m^3, according to a standardized assay zone for analytical purposes as defined in CSA-O80 and AWPA C-4 standards.

44. (New) Process according to claim 25, wherein the amount of polymerizable reactive groups impregnated in at least 13 mm outer portion of the wooden elements is comprised between 10 and 40 kg/m^3 of wooden elements.

45. (New) Treated wooden elements whenever obtained according to the process of claim 25.